IN THE CLAIMS:

Kindly amend the claims, without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents, to read as follows:

1-38. (Canceled)

39. (New) A purified or isolated nucleic acid which encodes a polypeptide having at least 80% amino acid identity with the β3 sub-unit polypeptide of the amino acid sequence of SEQ ID NO: 2 over the entire length of the sequence of SEQ ID NO: 2, or with a peptide fragment thereof, or a sequence complementary thereto, said β3 sub-unit polypeptide or said peptide fragment which co-operates with at least one α-subunit of voltage-gated sodium channels to form an active sodium channel.

40. (New) A purified or isolated nucleic acid according to Claim 39, wherein said nucleic acid has at least 90% nucleotide identity with the nucleotide sequence of SEQ ID NO: 4, or a sequence complementary thereto.

41. (New) A purified or isolated nucleic acid according to Claim 39, wherein said nucleic acid comprises residues 1-375 of SEQ ID NO: 4.

42. (New) A purified or isolated nucleic acid according to Claim 39, wherein said nucleic acid comprises a polynucleotide having at least 90% nucleotide identity with residues 376-1023 of SEQ ID NO: 4.

43. (New) A purified or isolated nucleic acid according to Claim 39, wherein said nucleic acid comprises residues 1024-1261 of SEQ ID NO: 4.

44. (New) A purified or isolated nucleic acid which encodes a polypeptide having at least 80% amino acid identity with the β3 sub-unit polypeptide of the amino acid sequence of SEQ ID NO: 1 over the entire length of the sequence of SEQ ID NO: 1, or with a peptide fragment thereof, or a sequence complementary thereto, with the exception of the nucleic acid of EMEST database having accession number AA685538 (SEQ ID NO: 48, herein), said β3 sub-unit polypeptide or said peptide fragment which co-operates with at least one α-subunit of voltage-gated sodium channels to form an active sodium channel.

45. (New) A purified or isolated nucleic acid according to Claim 44, wherein said nucleic acid has at least 90% nucleotide identity with the nucleotide sequence of SEQ ID NO: 3, or a sequence complementary thereto.

46. (New) A purified or isolated nucleic acid according to Claim 4, wherein said nucleic acid comprises residues 1-362 of SEQ ID NO: 3.

47. (New) A purified or isolated nucleic acid according to Claim 44, wherein said nucleic acid comprises a polynucleotide having at least 90% nucleotide identity with residues 363-1010 of SEQ ID NO: 3.

48. (New) A purified or isolated nucleic acid according to Claim 44, wherein said nucleic acid comprises residues 1011-2220 of SEQ ID NO: 3.

49. (New) A purified or isolated polynucleotide comprising at least 10 consecutive nucleotides of a nucleic acid encoding a β3 sub-unit of a voltage-gated sodium channel comprising the sequence SEQ ID NO: 3 or SEQ ID NO: 4, in which the polynucleotide encodes a polypeptide which co-operates with at least one α-subunit of voltage-gated sodium channels to form an active sodium channel, with the exception of the polynucleotide of SEQ ID NO: 876 in WO 98/45435 (SEQ ID NO: 49, herein) and the polynucleotide of EMEST database having accession number AA685538 (SEQ ID NO: 48, herein).

50. (New) A purified or isolated nucleic acid according to Claim 49, wherein said nucleic acid comprises at least 10 consecutive nucleotides of the nucleotide sequence of SEQ ID NO 3, or a sequence complementary thereto.

51. (New) A purified or isolated nucleic acid according to Claim 49, wherein said nucleic acid comprises at least 10 consecutive nucleotides of the nucleotide sequence of SEQ ID NO 4, or a sequence complementary thereto.

52. (New) A purified or isolated nucleic acid according to Claim 49, wherein said nucleic acid is selected from the group consisting of SEQ ID No: 35 to 43 or a polynucleotide encoding a peptide of SEQ ID No: 5 to 32, SEQ ID No: 46 or SEQ ID No: 47.

53. (New) A kit for the amplification of a nucleotide sequence according to Claim 39, wherein said kit comprises :

(a) a pair of amplification primers which can hybridize to a P3 subunit nucleic acid according to Claim 39, and

(b) optionally, the reagents necessary for performing the amplification reaction.

54. (New) A kit for detecting the presence of a polynucleotide comprising a nucleic acid according to Claim 39, wherein said kit comprises:

(a) a nucleic acid probe or a plurality of nucleic acid probes which can hybridize, under stringent hybridization conditions, to a nucleotide sequence included in a nucleic acid according to Claim 39;

(b) optionally, the reagents necessary to perform the hybridization reaction.

55. (New) The kit of Claim 65, wherein the nucleic acid probe or the plurality of nucleic acid probes are immobilized on a substrate.

56. (New) The kit of Claim 65, wherein the nucleic acid probe or the plurality of nucleic acid probes are labeled with a detectable molecule.

57. (New) A recombinant vector comprising a nucleic acid according to Claim 39.

58. (New) An isolated recombinant cell comprising a nucleic acid according to Claim 39.

59. (New) A method for producing a polypeptide encoded by a nucleic acid according to Claim 39, wherein said method comprises the following steps of :

(a) culturing, in an appropriate culture medium, a host cell previously transformed or transfected with a polynucleotide according to Claim 39;

(b) harvesting the culture medium thus conditioned or lyse the host cell, for example by sonication or by osmotic shock; and

(c) separating or purifying, from said culture medium, or from the pellet of the resulting cell lysate, the thus produced polypeptide of interest.